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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Paroc Group Oy
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-4099-3121-EN
Registration number:	NEPD-4099-3121-EN
ECO Platform reference number:	-
Issue date:	29.12.2022
Valid to:	29.12.2027

PAROC Stone Wool Thermal Insulation (Hvac Slabs & Mats & OEM Slabs)

PAROC Technical Insulation

Paroc Group Oy
Owner of the declaration



Product

Product:
PAROC Stone Wool Thermal Insulation (Fire Slab 90)

Program operator:
The Norwegian EPD Foundation
P.O. Box 5250 Majorstuen, N – 0303 Oslo, Norway
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Declaration number:
NEPD-4099-3121-EN

ECO Platform reference number:

This declaration is based on Product Category Rules:
CEN Standard EN 15804 / version A1 / serves as core PCR
NPCR 012:2018 version 2. Part B for Thermal insulation products

Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence.
EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:
1 m² of stone wool with a thermal resistance (R) of 1 Km²/W. 1 m² PAROC Fire Slab 90 at R=1 is at a weight of 3,15 kg with thickness of 35 mm.

Declared unit with option:
-

Functional unit:
1 m² of stone wool with thermal resistance (R) of 1 m²K/W with a reference service life of minimum 60 years. Impact excludes any lamination. See Annex, accompanying this EPD, for LCA results of facings.

The EPD has been worked out by:
Emelia Samuelsson, Paroc AB

Verification:

The CEN Norm EN 15804 serves as the core PCR. Independent verification of the declaration and data, according to ISO14025:2010

☐ internal ☒ external

Martin Erlandsson, IVL
(Independent verifier approved by EPD Norway)

Owner of the declaration:
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Manufacturer:
Paroc Group Oy
FI-00181, Helsinki
Finland

Place of production:
Trzemeszno, Poland
Hällekis, Sweden

Management system:
ISO 14001 and ISO 9001

Organisation no:
23025016

Issue date:
29.12.2022

Valid to:
29.12.2027

Year of study:
2018

Comparability:
EPD of construction products may not be comparable if they do not comply with EN 15804 and seen in a building context.

Approved

Håkon Hauan
(Managing Director EPD Norway)

Product

Product description:
Stone wool is made from volcanic rock, typically basalt or dolomite, and an increasing proportion of recycled material.

PAROC stone wool insulation is naturally non-combustible and durable. It is made of natural stone (~2%) and air (~98%). As stone wools thermal performance is based on static air, insulation products keep their energy saving abilities and dimensions in different temperature and moisture conditions during the life cycle of a building.

The HVAC systems in buildings perform many roles. PAROC solutions for HVAC include non-combustible and energy efficient insulation solutions for all parts of the HVAC system.

Market:
Mainly Sweden, Finland, Norway, Denmark, Poland, Germany, Austria, Czech Republic, Slovakia, Belarus

Reference service life:
The reference service lifetime of PAROC products is equal to the reference service life of the building. For the purpose of this EPD the reference service life is considered to be minimum 60 years, which is usually the assumption about the lifetime of the building where this is installed.

Product content:

Materials	%
Mineral Wool	96-99%
Binder (phenol-formaldehyde-urea-copolymer)	0-6%
Dustbinding (mineral oil)	0,1-0,5%

Technical data:

Name	Value	Unit
Thermal conductivity EN 12939 and EN 12667	0,035	W/(mK)
Thickness Class EN 823 EN 14303	T3-T5	
Fire Class EN 13501-1	A1	
Length and width EN 822 and EN 14303	L + excess, - 0 W ± 10	mm
Water vapour diffusion resistance factor /EN12086/	1	

LCA: Calculation Rules

Functional unit:
1 m² stone wool with a thermal resistance (R) of 1 Km^2W^{-1}.

The calculation of the weight per square meter is done as follows:

m^2-weight = density [kg/m^3] x insulation thickness [m] (in order to meet a specific thermal resistance) = m^2-weight insulation = density [kg/m^3[x R [m^2K/W] x λ [W/m K] = [kg/m^2].

The specific product, referred to in the declared unit, is 1 m^2 of PAROC Fire Slab 90 (90 kg/m3).

Data quality:

The stone wool production data is line specific from plants in Hällekis, Sweden and Trzemeszno, Poland. Foreground data refer to the year 2018 and is weighted according to produced volumes 2018.

For life cycle modeling the GaBi 9 Software System for Life Cycle Assessment, developed by Sphera Solutions, Inc. (formerly known as thinkstep AG), is used (/GaBi 9 2020/). All relevant background datasets are taken from the GaBi 9 software database. To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation, auxiliary materials and facing materials.

The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.

Background data refer to the years 2018 until 2021 (/GaBi 9 2020/) with a country specific scope as far as available, e.g., for raw material extraction and production, transportation, and energy supply.

All relevant processes (foreground and background) have been considered when modelling stone wool production. The process data and the used background data are consistent. The data quality can be qualified as good.

Allocation:

The allocation is made in accordance with the provisions of EN 15804.

Incoming energy, water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

System boundary:
Table below identifies the modules included in this study.

According to EN 15804 any declared benefits and loads from net flows leaching the product system not allocated as co-products and have passed the end-of-waste state shall be included in the module D. Module D includes reuse, recovery and/or recycling potentials.

The production stage (A1-A3) covers the following steps:

- Raw materials production (e.g., dolomite, diabase, pre-production of facing material e.g., glass fleece etc.)
- Production of the stone wool itself and the facings application
- Component's production (e.g., resin)
- Transports of raw materials and pre-products to manufacturing plants
- Production of packaging materials
- Waste management, water treatment, end-of-life of residues

With the exception of Modules A1 to A3 (describing the manufacturing of stone wool) all other modules are calculated on the basis of assumptions or scenarios.

The following scenarios were considered in this study:

- Modules A4: The average distance to building site is 273 km.
- Modules A5: Packaging waste processing, waste generated at the installation is assumed to be 0 %.
- Modules C2-C4: Similar to installation scenario with similar kind of waste. In C2 a transport to waste treatment distance 50 km is assumed.
- Module D: Credits from waste treatment (recycling and incineration with energy recovery) of product parts after use and from installation losses.

Cut-off criteria:

All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

The declared unit is 1 m^2 stone wool without any lamination. The impact from the additional facings shall be added to the result, see the Annex accompanying this EPD for the LCA results.

LCA: System Boundaries

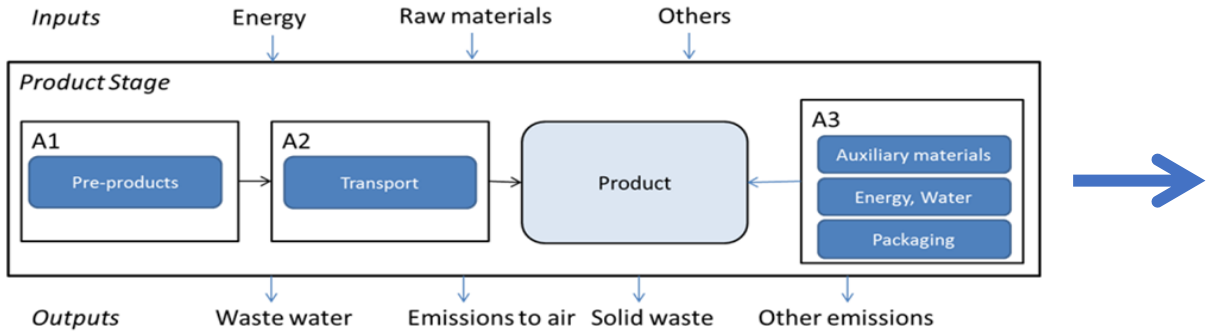


Figure 1. Schematic representation of the LCA system boundaries for the production module (A1-A3)

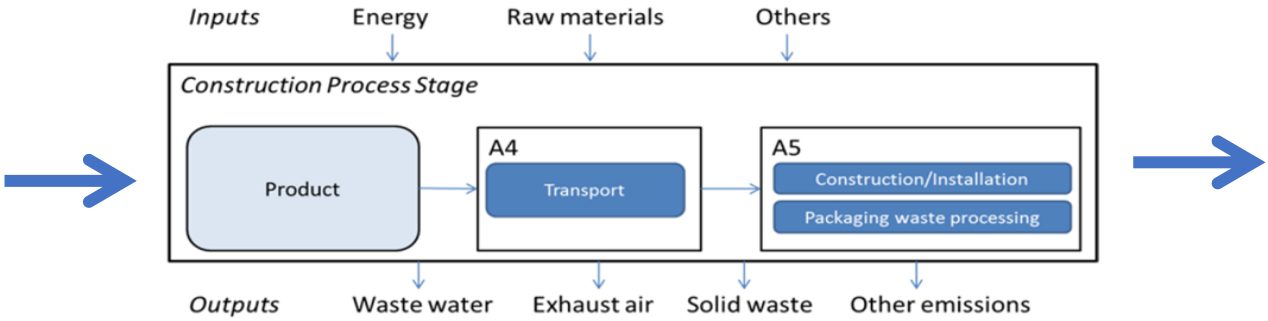


Figure 2. Schematic representation of the LCA system boundaries for the construction process stage (A4-A5)

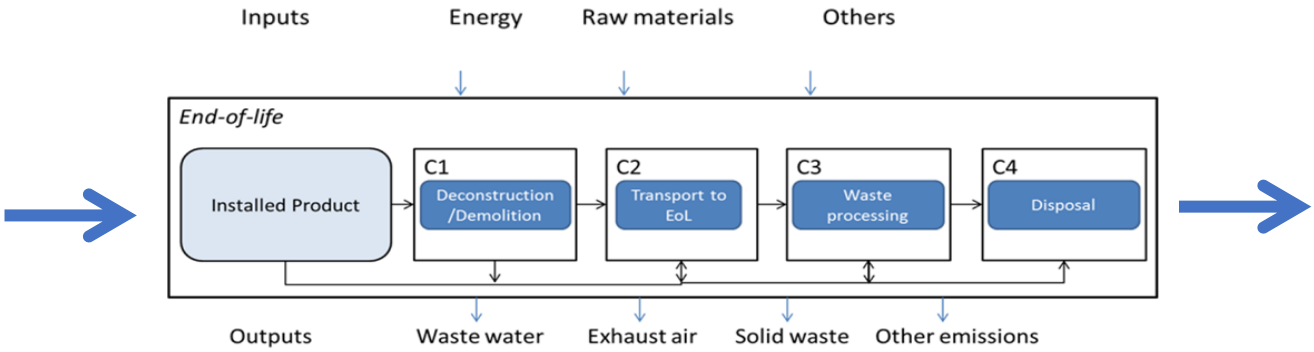


Figure 3. Schematic representation of the LCA system boundaries for the End-of-life stage (C1-C4)

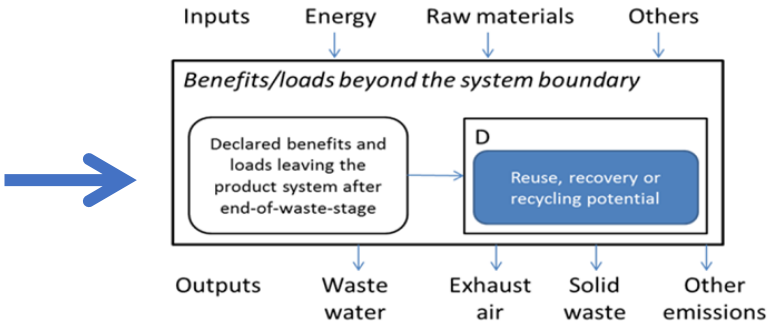


Figure 4. Schematic representation of the LCA system boundaries for the benefits and loads beyond the product system boundary in module D

LCA: Scenarios and Additional Technical Information

The following information describe the scenarios in the different modules of the EPD.

Transports to the customer are calculated on the basis of a scenario with an average truck trailer with a 27 t payload. For the final stone wool product, a loading ratio of 30 % of weight capacity has been set. The average transport distance to the customer is assumed to be 273 km as a basis for this study. The assumption is based on a 270 km distance for the Polish plant and a 277 km distance for the Swedish plant. Since the Polish plant contribute with a share of 53% and the Swedish plant with a share of 47% the weighted average distance is set to 273 km.

Transport to the Building Site (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Energy use per km	Total energy use
Truck	100% (30% weight capacity)	Truck fleet	273	0,9 liter	245,7 liters

Installation in the Building (A5)

Parameter	Parameter expressed by functional unit
Auxiliary materials for the installation	Not applicable
Consumption of other resources	Not applicable
Quantitative description of the type of energy and consumption rate during the installation process	Not applicable
Wastes at the construction site generated from the installation of the product	Installation waste is assumed to be 0% since all material can be used within the building
Material outputs as a result from waste management processes at the installation site. For example, compilation for recycling, for energy recovery and final disposal	Waste management process for packaging materials
Emissions to air, soil and water	Not applicable

End of Life (C1, C2, C3, C4)

Parameter	Parameter expressed by functional unit
Compilation processes district	Not applicable
Recycling systems	Not applicable
Final disposal	3,15 kg Landfilling

Benefits/loads Beyond the System Boundary (D)

Materials that create a benefit in Module D are packaging materials. Benefits from the packaging waste treatment are considered in module D. Energy products of incineration (e.g. steam, electricity, metals) are credited using the European production averages (e.g. European grid mix for power). Credits are reported in module D.

LCA: Results

Life Cycle Impact Assessment results represent the environmental impacts for the life cycle of stone wool from cradle to grave.

The goal is to address all necessary parameters according to EN 15804 for creating EPDs. In a first step the results are calculated based on 1 kg stone wool representing the PAROC average. After that the data is scaled according to the provided density and lambda and fixed to the mass required for one square meter product with the respective R value = 1.

The PAROC Technical Insulation products are clustered according to their application into different product groups. Scaling factors are included in the EPD indicating the factor which to multiply with the indicators in order to get the environmental burden on product level described. The scaling factors solely refer to the stone wool used in these products, and thus do not include the different facings. Due to this fact, the variation is less than 10% by reason of the density, lambda and binder. The additional impact from the facings shall be added to the final result, see the Annex accompanying this EPD for the LCA results. The scaling calculation shall be done as follows:

Reference product environmental impact per m2 (4,23) x scaling factor of specific product + environmental impact of specific facing

Product groups
Hvac Lamella Mats
Hvac Mats
Hvac Slabs
OEM Slabs

Product Group	Product	Thickness	Scaling Factor
Hvac Lamella Mats	PAROC Hvac Lamella Mat	20-120	0,46

Product Group	Product	Thickness	Scaling Factor
Lamellas	PAROC Lamella 80	25-100	1,07
	PAROC Lamella 100	25-100	1,50
	PAROC Lamella 110	25-100	1,65
	PAROC Lamella 140	25-100	2,33
	PAROC Lamella 150	25-100	2,50
	PAROC Lamella 150 LO	25-100	2,50
	PAROC Lamella 160	25-100	2,67
	PAROC Lamella 180	25-100	3,67
	PAROC Lamella 200	25-100	3,67
	PAROC Lamella 230	25-100	4,45

Product Group	Product	Thickness	Scaling Factor
Hvac Mats	PAROC FireVent Mat	30-120	0,81
	PAROC Vent Mat	30-120	0,81
	PAROC Hvac Fire Mat	30-120	1,00
	PAROC Hvac Fire Mat LT	30-120	0,88
	PAROC Hvac FireTherm Mat BlackCoat	100	0,67
	PAROC Hvac Mat	30-120	0,44
	PAROC Hvac VentMat	30-120	0,45
	PAROC Hvac Multimat	30-120	0,48
	PAROC Vect Mat BlackCoat EI30	60	0,67
	PAROC Vect Mat BlackCoat EI60	100	0,67
	PAROC Vect Wired Mat BlackCoat EI30	60	0,86
	PAROC Vect Wired Mat BlackCoat EI60	80	0,97
	PAROC Vect Wired Mat BlackCoat EI120	100	0,97

Product Group	Product	Thickness	Scaling Factor
Hvac Slabs	PAROC Slab 30	15-280	0,37
	PAROC Slab 45	20-280	0,51
	PAROC Slab 100	10-250	1,11
	PAROC Slab 140	10-175	1,64
	PAROC Fire Slab 90	20-275	1,00
	PAROC Fire Slab 100 R10	20-250	1,11
	PAROC Fire Slab 140	20-175	1,64
	PAROC Fire Steel Protect	10-155	1,93
	PAROC Hvac Slab	15-150	0,67
	PAROC Hvac Fire Slab EI30	50-100	0,94
	PAROC Hvac Fire Slab EI30 LT	50-100	0,94
	PAROC Hvac Fire Slab EI60	50-100	2,29
	PAROC Hvac Fire Slab EI60 LT	50-100	2,29
	PAROC Hvac Fire Slab EI90	50-100	2,29
	PAROC Hvac Fire Slab EI90 LT	50-100	2,29
	PAROC Hvac Fire Slab EI120	50-100	2,29
	PAROC Hvac Fire Slab EI120 LT	50-100	2,29
	PAROC Vent Slab 18 BlackCoat	10-135	2,11
	PAROC Pyrotech Slab 140	10-175	1,73
	PAROC Pyrotech Slab 150	10-165	1,86
	PAROC Pyrotech Slab 160	10-155	1,98
	PAROC Pyrotech Slab 180	10-135	2,23
	PAROC Vect Slab BlackCoat EI30	50	0,89
	PAROC Vect Slab BlackCoat EI60	70	1,33

Product Group	Product	Thickness	Scaling Factor
OEM Slabs	PAROC Slab 40	30-280	0,46
	PAROC Slab 45	20-280	0,51
	PAROC Slab 50	20-280	0,57
	PAROC Slab 60	30-280	0,67
	PAROC Slab 60 R10	30-280	0,67
	PAROC Slab 65	15-280	0,72
	PAROC Slab 70	25-280	0,78
	PAROC Slab 70 R10	25-280	0,78
	PAROC Slab 70 R15	25-280	0,78
	PAROC Slab 80	10-280	0,89
	PAROC Slab 80 R12	10-280	0,89
	PAROC Slab 90	10-275	1,00
	PAROC Slab 90 R23	10-275	1,00
	PAROC Slab 100 R10	10-250	1,11
	PAROC Slab 100 R20	10-250	1,11
	PAROC Slab 100 R23	10-250	1,11
	PAROC Slab 100 R35	10-250	1,11
	PAROC Slab 110	10-225	1,22
	PAROC Slab 110 R12	10-225	1,22
	PAROC Slab 120	10-205	1,41
	PAROC Slab 120 R13	10-206	1,41
	PAROC Slab 120 R23	10-207	1,41
	PAROC Slab 120 R25	10-208	1,41
	PAROC Slab 130	10-190	1,53
	PAROC Slab 140	10-175	1,64
	PAROC Slab 140 R37	10-175	1,64
	PAROC Slab 150	10-165	1,86
	PAROC Slab 150 R23	10-165	1,86
	PAROC Slab 150 LO	10-165	1,86
	PAROC Slab 160	10-155	1,98
	PAROC Slab 170	10-145	2,10
	PAROC Slab 180	10-135	2,46
	PAROC Slab 200	10-125	2,73
	PAROC Slab 200 R13	10-125	2,73
	PAROC Slab 220	10-110	3,00
	PAROC Slab 220 LT	10-45	2,72
	PAROC Slab 220 PR30	10-45	2,72
	PAROC Slab 240	10-100	3,28
	PAROC Slab 240 SE	10-100	3,28
	PAROC Slab 640	25-250	0,89
	PAROC Slab 680	20-175	1,41
	PAROC Fireplace Slab 80	20-280	0,89
	PAROC Fireplace Slab 90	20-275	1,00
	PAROC Fire Slab 80	20-280	0,89
	PAROC Fire Slab 100	20-250	1,11
	PAROC Fire Slab 110	20-225	1,22
	PAROC InSolar 50	20-120	0,57
	PAROC Silencer 60	25-280	0,67
	PAROC Block 70	24-280	0,78
	PAROC Block 80	24-280	0,89
	PAROC Block 80 R34	24-280	0,89
	PAROC Block 90	24-275	1,00
	PAROC Block 120	24-205	1,41
	PAROC Block 140	24-175	1,64
	PAROC InVent 40	25-280	0,46
	PAROC InVent 45	20-280	0,51
	PAROC InVent 60	20-280	0,67
	PAROC InVent 80	20-280	0,89
	PAROC InVent 100	15-250	1,11
	PAROC InVent 120	15-205	1,41

LCA: Results

System Boundaries (X = declared module; MND = module not declared)																
Production			Installation		Use Stage							End-of-Life				Next Product System
Raw Material Supply (extraction, processing, recycled material)	Transport to Manufacturer	Manufacturing	Transport to Building Site	Installation into Building	Use / Application	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-Construction / Demolition	Transport to EoL	Waste Processing for Reuse, Recovery or Recycling	Disposal	Reuse, Recovery, Recycling Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X

Environmental Impact: 1m² PAROC Fire Slab 90 (per 3,15 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	4,23*	0,0881	0,2719	0,0106	0,0429	-0,0804
ODP	[kg CFC11-eq.]	1,84E-008	1,43E-017	3,45E-017	1,73E-018	2,36E-016	-1,08E-015
AP	[kg SO_2-eq.]	0,0102	0,000235	1,98E-005	2,59E-005	0,000275	-9,87E-005
EP	[kg PO_4^{3-}eq.]	0,00172	5,86E-005	4,31E-006	6,4E-006	3,1E-005	-1,24E-005
POCP	[kg ethene-eq.]	0,000596	-8,76E-005	1,56E-006	-9,28E-006	2,07E-005	-9,16E-006
ADPM	[kg Sb-eq.]	6,64E-007	7,24E-009	1,81E-009	8,73E-010	1,65E-008	-1,45E-008
ADPE	[MJ]	34,5	1,19	0,00358	0,143	0,609	-1,14

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,0989 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0,0989 kgCO_2-eq.).

Resource Use: 1 m² PAROC Fire Slab 90 (per 3,15 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	4,34	-	0,00766	-	-	-
RPEM	[MJ]	1,09	-	-1,09	-	-	-
TPE	[MJ]	5,43	0,0669	-1,08234	0,00807	0,0821	-0,289
NRPE	[MJ]	30,5	-	-	-	6,077	-
NRPM	[MJ]	5,45	-	-	-	-5,45	-
TRPE	[MJ]	35,9	1,19	0,0409	0,144	0,627	-1,39
SM	[kg]	0,18	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,0121	7,75E-005	0,00049	9,34E-006	0,000158	-0,000334

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² PAROC Fire Slab 90 (per 3,15 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,95E-008	5,54E-008	2,94E-011	6,68E-009	9,56E-009	-5,54E-010
NHW	[kg]	0,571	0,000182	0,00128	2,2E-005	3,15	-0,000626
RW	[kg]	0,000306	1,47E-006	2,01E-006	1,78E-007	7,14E-006	-9,86E-005

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² PAROC Fire Slab 90 (per 3,15 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0,0989	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Key environmental indicators	Unit	Cradle to gate A1-A3	Transport ****
GWP-TOT Energy Use (=TPE+TRPE) Dangerous substances	kg $C0_2$-eqv MJ *	4,23 41,33 -	0,0881 1,2569 -

*The product contains no substances from the REACH Candidate list of the Norwegian priority list.

****Average transport from production site to customer.

Additional Norwegian Requirements

Greenhouse gas emissions from the use of hydroelectricity in the manufacturing phase

The selection of the background data for the hydroelectricity generation in Sweden and power grid mix in Poland is in line with EN 15804 and contribute to GWP as given below.

Greenhouse gas emissions		
Country	**Amount**	**Unit**
Poland Sweden	0,931 0,0143	kg CO_2-eqv/kWh kg CO_2-eqv/kWh

Dangerous substances

☒ The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

☐ The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.

☐ The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.

☐ The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

Dangerous substances

None of the following substances have been added to the product: Substances on the REACH Candidate list of substances of very high concern or substances on the Norwegian Priority list as of 2022-06-10 or substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.

Transport

Average transport distance from production site to customer is: 273 km

Carbon footprint

Carbon footprint has not been worked out for the product.

Bibliography

ISO 14025:2010	*Environmental labels and declarations – Type III environmental declarations – Principles and procedures.*
ISO 14040:2006	*Environmental management – Life cycle assessment – Principles and framework.*
ISO 14044:2006	*Environmental management – Life cycle assessment – Requirements and guidelines.*
EN 15804:2012+A1:2013	*Sustainability of construction works – Environmental product declaration – Core rules for the product category of construction products.*
ISO 21930:2007	*Sustainability in building construction – Environmental declaration of building products.*
Goymann M, Kanekar H, Bernard Y	*Background report for EPD of Paroc Stone Wool Insulation. September 2020, revised October 2022.*
PCR	*NPCR 012:2018 version 2. Part B for Thermal insulation products*

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Annex to the ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Paroc Group Oy
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	Annex to NEPD-4098/4099/4100/4101/4102-3121-EN
Registration number:	Annex to NEPD-4098/4099/4100/4101/4102-3121-EN
ECO Platform reference number:	-
Issue date:	29.12.2022
Valid to:	29.12.2027

For the following facing options for PAROC Stone Wool Thermal Technical Insulation Products

AL1, AL6, AL8, AluCoat Fix, AluCoat/AirCoat, BlackCoat, Clad, Comfort/N4, G1, G2, G3, G4, G5/G6/G9, G7, Galvanized Steel Wire Mesh, LF1, N1/N9, N3/N5/N7, N6, N8, Tape, W1, W2

Paroc Group Oy
Owner of the declaration

LCA: Results

This Annex is a supplementary document to the verified EPDs for PAROC Stone Wool Thermal Technical Insulation.

Life Cycle Impact Assessment results represent the environmental impacts for the life cycle of facings from cradle to grave. The goal is to address all necessary parameters according to EN 15804 for creating EPDs and follows the same calculation rules as for the PAROC Stone Wool Thermal Insulation.

The results below shall be added to the final results for those PAROC technical insulation products that has a facing(s). Some facings are covered by the same results due to similar weight and composition, however the results always represent impact per each facing. The calculation shall be done as follows.

(Reference product's environmental impact per m2 x scaling factor of specific product) + environmental impact of specific facing(s)

System Boundaries (X = declared module; MND = module not declared)																
Production			Installation		Use Stage							End-of-Life				Next Product System
Raw Material Supply (extraction, processing, recycled material)	Transport to Manufacturer	Manufacturing	Transport to Building Site	Installation into Building	Use / Application	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-Construction / Demolition	Transport to EoL	Waste Processing for Reuse, Recovery or Recycling	Disposal	Reuse, Recovery, Recycling Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X

Environmental Impact: 1m^2 AL1 (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,01	0,0036623	0	0,000446	0,00181	0
ODP	[kg CFC11-eq.]	6,35E-15	5,9505E-19	0	7,27E-20	9,94E-18	0
AP	[kg SO_2-eq.]	0,00418	9,8075E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000262	2,4429E-06	0	2,69E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,000274	-3,6523E-06	0	-3,91E-07	8,71E-07	0
ADPM	[kg Sb-eq.]	4,78E-07	3,0076E-10	0	3,68E-11	6,97E-10	0
ADPE	[MJ]	12,2	0,049311	0	0,00603	0,0256	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	5,52	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	5,42	0,0027829	0	0,00034	0,00346	0
NRPE	[MJ]	14,2	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	14,2	0,049511	0	0,00605	0,0264	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,0133	3,2176E-06	0	3,93E-07	6,66E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	7,79E-09	2,3035E-09	0	2,81E-10	4,02E-10	0
NHW	[kg]	0,257	0,000007574	0	9,25E-07	0,133	0
RW	[kg]	0,000784	6,1252E-08	0	7,48E-09	3,00E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL1 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,676	0,003672	0	0,000448	0,00181	0
ODP	[kg CFC11-eq.]	4,53E-15	5,97E-19	0	7,29E-20	9,97E-18	0
AP	[kg SO_2-eq.]	0,00234	9,84E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000167	2,45E-06	0	2,70E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,00018	-3,7E-06	0	-3,92E-07	8,74E-07	0
ADPM	[kg Sb-eq.]	1,55E-06	3,02E-10	0	3,69E-11	6,99E-10	0
ADPE	[MJ]	10,2	0,049511	0	0,00605	0,0257	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,89	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,89	0,002788	0	0,000341	0,00347	0
NRPE	[MJ]	11,4	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	11,4	0,049611	0	0,00606	0,0265	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00715	3,23E-06	0	3,94E-07	6,68E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,78E-09	2,31E-09	0	2,82E-10	4,04E-10	0
NHW	[kg]	0,125	7,59E-06	0	9,28E-07	0,133	0
RW	[kg]	0,00047	6,15E-08	0	7,51E-09	3,01E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL6 (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,61	0,002843	0	0,000347	0,0014	0
ODP	[kg CFC11-eq.]	3,93E-15	4,62E-19	0	5,65E-20	7,72E-18	0
AP	[kg SO_2-eq.]	0,00234	7,62E-06	0	8,48E-07	9,00E-06	0
EP	[kg PO_4^{3-}eq.]	0,000155	1,9E-06	0	2,09E-07	1,01E-06	0
POCP	[kg ethene-eq.]	0,000163	-2,8E-06	0	-3,03E-07	6,77E-07	0
ADPM	[kg Sb-eq.]	1,46E-06	2,34E-10	0	2,86E-11	5,41E-10	0
ADPE	[MJ]	8,3	0,038323	0	0,00468	0,0199	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,87	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,87	0,002158	0	0,000264	0,00269	0
NRPE	[MJ]	9,42	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,42	0,03847	0	0,0047	0,0205	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00706	2,5E-06	0	3,05E-07	5,17E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,01E-09	1,79E-09	0	2,19E-10	3,13E-10	0
NHW	[kg]	0,132	5,88E-06	0	7,19E-07	0,103	0
RW	[kg]	0,000444	4,76E-08	0	5,81E-09	2,33E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AL8 (per 0,103 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,11	0,003672	0	0,000448	0,00181	0
ODP	[kg CFC11-eq.]	9,86E-15	5,97E-19	0	7,29E-20	9,97E-18	0
AP	[kg SO_2-eq.]	0,00307	9,84E-06	0	1,09E-06	1,16E-05	0
EP	[kg PO_4^{3-}eq.]	0,000291	2,45E-06	0	2,70E-07	1,31E-06	0
POCP	[kg ethene-eq.]	0,000271	-3,7E-06	0	-3,92E-07	8,74E-07	0
ADPM	[kg Sb-eq.]	5,20E-06	3,02E-10	0	3,69E-11	6,99E-10	0
ADPE	[MJ]	16	0,049511	0	0,00605	0,0257	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	4,64	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	4,64	0,002788	0	0,000341	0,00347	0
NRPE	[MJ]	17,6	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	17,6	0,049611	0	0,00606	0,0265	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00935	3,23E-06	0	3,94E-07	6,68E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	2,95E-08	2,31E-09	0	2,82E-10	4,04E-10	0
NHW	[kg]	0,2	7,59E-06	0	9,28E-07	0,133	0
RW	[kg]	0,00064	6,15E-08	0	7,51E-09	3,01E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AluCoat Fix (per 0,133 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,576	0,002288	0	0,000279	0,00113	0
ODP	[kg CFC11-eq.]	3,68E-15	3,72E-19	0	4,55E-20	6,22E-18	0
AP	[kg SO_2-eq.]	0,00222	6,14E-06	0	6,83E-07	7,25E-06	0
EP	[kg PO_4^{3-}eq.]	0,000142	1,53E-06	0	1,69E-07	8,17E-07	0
POCP	[kg ethene-eq.]	0,000158	-2,3E-06	0	-2,45E-07	5,45E-07	0
ADPM	[kg Sb-eq.]	1,32E-06	1,88E-10	0	2,30E-11	4,36E-10	0
ADPE	[MJ]	7,7	0,030876	0	0,00377	0,0161	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,74	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,74	0,001739	0	0,000213	0,00216	0
NRPE	[MJ]	8,83	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	8,83	0,030976	0	0,00378	0,0165	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00666	2,01E-06	0	2,46E-07	4,17E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,22E-09	1,44E-09	0	1,76E-10	2,52E-10	0
NHW	[kg]	0,124	4,74E-06	0	5,79E-07	0,0831	0
RW	[kg]	0,000444	3,84E-08	0	4,68E-09	1,88E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² AluCoat/AirCoat (per 0,083 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,616	0,002483	0	0,000303	0,00123	0
ODP	[kg CFC11-eq.]	4,08E-15	4,04E-19	0	4,93E-20	6,75E-18	0
AP	[kg SO_2-eq.]	0,00226	6,66E-06	0	7,41E-07	7,87E-06	0
EP	[kg PO_4^{3-}eq.]	0,000151	1,66E-06	0	1,83E-07	8,86E-07	0
POCP	[kg ethene-eq.]	0,000165	-2,5E-06	0	-2,65E-07	5,91E-07	0
ADPM	[kg Sb-eq.]	1,45E-06	2,04E-10	0	2,50E-11	4,73E-10	0
ADPE	[MJ]	8,49	0,033476	0	0,00409	0,0174	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,81	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,81	0,001884	0	0,00023	0,00235	0
NRPE	[MJ]	9,64	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,64	0,033576	0	0,0041	0,0179	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00678	2,18E-06	0	2,67E-07	4,52E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	-2,37E-09	1,56E-09	0	1,91E-10	2,73E-10	0
NHW	[kg]	0,125	5,14E-06	0	6,28E-07	0,0901	0
RW	[kg]	0,000456	4,16E-08	0	5,08E-09	2,04E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² BlackCoat (per 0,09 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² Clad (per 0,35 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,26	0,0096628	0	0,00118	0,00477	0
ODP	[kg CFC11-eq.]	9,02E-15	1,5688E-18	0	1,92E-19	2,62E-17	0
AP	[kg SO_2-eq.]	0,00606	0,000025882	0	2,88E-06	3,06E-05	0
EP	[kg PO_4^{3-}eq.]	0,000382	6,4499E-06	0	7,11E-07	3,45E-06	0
POCP	[kg ethene-eq.]	0,000423	-9,6375E-06	0	-1,03E-06	2,30E-06	0
ADPM	[kg Sb-eq.]	1,70E-05	7,944E-10	0	9,70E-11	1,84E-09	0
ADPE	[MJ]	19,4	0,13041	0	0,0159	0,0677	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	5,3	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	5,3	0,0073346	0	0,000896	0,00912	0
NRPE	[MJ]	22,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	22,1	0,13041	0	0,016	0,0697	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,0128	8,4934E-06	0	1,04E-06	1,76E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,19E-08	6,0805E-09	0	7,43E-10	1,06E-09	0
NHW	[kg]	0,239	0,000019982	0	2,44E-06	0,35	0
RW	[kg]	0,00105	1,6188E-07	0	1,98E-08	7,93E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Clad (per 0,35 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,0939	0,00041417	0	5,05E-05	0,000204	0
ODP	[kg CFC11-eq.]	1,28E-15	6,7299E-20	0	8,22E-21	1,12E-18	0
AP	[kg SO_2-eq.]	0,000103	1,1094E-06	0	1,23E-07	1,31E-06	0
EP	[kg PO_4^{3-}eq.]	1,70E-05	2,7629E-07	0	3,05E-08	1,48E-07	0
POCP	[kg ethene-eq.]	1,88E-05	-4,1317E-07	0	-4,42E-08	9,86E-08	0
ADPM	[kg Sb-eq.]	2,17E-08	3,4023E-11	0	4,16E-12	7,88E-11	0
ADPE	[MJ]	1,79	0,0055805	0	0,000682	0,0029	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,0001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,0001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,253	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,253	0,00031476	0	3,84E-05	0,000391	0
NRPE	[MJ]	1,92	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	1,92	0,0055958	0	0,000684	0,00299	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000385	3,6423E-07	0	4,45E-08	7,53E-07	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	8,47E-10	2,6029E-10	0	3,18E-11	4,55E-11	0
NHW	[kg]	0,00151	8,5634E-07	0	1,05E-07	0,015	0
RW	[kg]	5,25E-05	6,9299E-09	0	8,47E-10	3,40E-08	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Comfort/N4 (per 0,015 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² G1 (per 0,24 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,485	0,0066299	0	8,08E-04	0,00327	0
ODP	[kg CFC11-eq.]	4,55E-15	1,0741E-18	0	1,32E-19	1,80E-17	0
AP	[kg SO_2-eq.]	0,00273	0,000017735	0	1,98E-06	2,10E-05	0
EP	[kg PO_4^{3-}eq.]	1,79E-04	4,4217E-06	0	4,88E-07	2,36E-06	0
POCP	[kg ethene-eq.]	1,88E-04	-6,6099E-06	0	-7,07E-07	1,58E-06	0
ADPM	[kg Sb-eq.]	1,72E-05	5,4458E-10	0	6,65E-11	1,26E-09	0
ADPE	[MJ]	8,86	0,089281	0	0,0109	0,0464	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	1,1	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	1,1	0,0050311	0	6,15E-04	0,00626	0
NRPE	[MJ]	9,86	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,86	0,089581	0	0,0109	0,0478	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00254	5,8205E-06	0	7,12E-07	1,20E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,61E-09	4,167E-09	0	5,09E-10	7,28E-10	0
NHW	[kg]	0,0406	0,000013688	0	1,67E-06	0,24	0
RW	[kg]	3,96E-04	1,1094E-07	0	1,35E-08	5,44E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G1 (per 0,24 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² G2 (per 0,23 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,466	0,0063499	0	7,74E-04	0,00313	0
ODP	[kg CFC11-eq.]	4,35E-15	1,0341E-18	0	1,26E-19	1,72E-17	0
AP	[kg SO_2-eq.]	0,00261	0,000016988	0	1,89E-06	2,01E-05	0
EP	[kg PO_4^{3-}eq.]	1,72E-04	4,2417E-06	0	4,67E-07	2,26E-06	0
POCP	[kg ethene-eq.]	1,80E-04	-6,3352E-06	0	-6,78E-07	1,51E-06	0
ADPM	[kg Sb-eq.]	1,64E-05	5,2211E-10	0	6,38E-11	1,21E-09	0
ADPE	[MJ]	8,56	0,085534	0	0,0105	0,0445	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	1,05	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	1,05	0,0048211	0	5,89E-04	0,006	0
NRPE	[MJ]	9,51	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	9,51	0,085834	0	0,0105	0,0458	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m^3]	0,00244	5,5805E-06	0	6,82E-07	1,15E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	5,38E-09	3,997E-09	0	4,88E-10	6,98E-10	0
NHW	[kg]	0,0387	0,000013141	0	1,61E-06	0,23	0
RW	[kg]	3,78E-04	1,0641E-07	0	1,30E-08	5,21E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G2 (per 0,23 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² G3 (per 0,46 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,897	0,012688	0	1,55E-03	0,00627	0
ODP	[kg CFC11-eq.]	8,93E-15	2,0635E-18	0	2,52E-19	3,45E-17	0
AP	[kg SO_2-eq.]	0,00546	0,000034023	0	3,79E-06	4,02E-05	0
EP	[kg PO_4^{3-}eq.]	3,50E-04	8,4734E-06	0	9,35E-07	4,53E-06	0
POCP	[kg ethene-eq.]	-3,66E-04	-0,000012641	0	-1,36E-06	3,02E-06	0
ADPM	[kg Sb-eq.]	3,52E-05	1,0441E-09	0	1,28E-10	2,42E-09	0
ADPE	[MJ]	15,5	0,17088	0	0,0209	0,089	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,013 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,013 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,19	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,19	0,0096375	0	1,18E-03	0,012	0
NRPE	[MJ]	17,5	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	17,5	0,17188	0	0,021	0,0916	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00468	0,000011141	0	1,36E-06	2,31E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,08E-08	7,9887E-09	0	9,76E-10	1,40E-09	0
NHW	[kg]	0,0823	0,000026282	0	3,21E-06	0,46	0
RW	[kg]	7,98E-04	2,1235E-07	0	2,60E-08	1,04E-06	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G3 (per 0,46 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² G4 (per 0,266 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,741	0,0073393	0	8,95E-04	0,00363	0
ODP	[kg CFC11-eq.]	6,07E-15	1,1941E-18	0	1,46E-19	1,99E-17	0
AP	[kg SO_2-eq.]	0,00396	0,000019635	0	2,19E-06	2,32E-05	0
EP	[kg PO_4^{3-}eq.]	2,50E-04	4,9011E-06	0	5,41E-07	2,62E-06	0
POCP	[kg ethene-eq.]	2,71E-04	-7,3293E-06	0	-7,84E-07	1,75E-06	0
ADPM	[kg Sb-eq.]	1,68E-05	6,0352E-10	0	7,38E-11	1,40E-09	0
ADPE	[MJ]	11,8	0,098834	0	0,0121	0,0514	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,73	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,73	0,0055758	0	6,81E-04	0,00693	0
NRPE	[MJ]	13,4	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	13,4	0,099463	0	0,0121	0,053	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00637	6,4552E-06	0	7,89E-07	1,34E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	7,75E-09	4,6164E-09	0	5,64E-10	8,07E-10	0
NHW	[kg]	0,119	0,000015188	0	1,86E-06	0,266	0
RW	[kg]	6,46E-04	1,2288E-07	0	1,50E-08	6,03E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G4 (per 0,266 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,391	0,0052458	0	6,39E-04	0,00259	0
ODP	[kg CFC11-eq.]	3,56E-15	8,5234E-19	0	1,04E-19	1,42E-17	0
AP	[kg SO_2-eq.]	0,00211	0,000014041	0	1,56E-06	1,66E-05	0
EP	[kg PO_4^{3-}eq.]	1,41E-04	3,5023E-06	0	3,86E-07	1,87E-06	0
POCP	[kg ethene-eq.]	1,48E-04	-5,2311E-06	0	-5,60E-07	1,25E-06	0
ADPM	[kg Sb-eq.]	1,31E-05	4,3117E-10	0	5,27E-11	9,98E-10	0
ADPE	[MJ]	7,34	0,070646	0	0,00864	0,0367	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,002 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,002 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,855	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,855	0,0039817	0	4,87E-04	0,00495	0
NRPE	[MJ]	8,11	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	8,11	0,070946	0	0,00866	0,0378	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00205	4,6117E-06	0	5,63E-07	9,54E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,43E-09	3,2976E-09	0	4,03E-10	5,77E-10	0
NHW	[kg]	0,0311	0,000010841	0	1,33E-06	0,19	0
RW	[kg]	3,05E-04	8,7781E-08	0	1,07E-08	4,31E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G5/G6/G9 (per 0,19 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² G7 (per 0,27 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,92	0,0074493	0	9,09E-04	0,00368	0
ODP	[kg CFC11-eq.]	7,48E-15	1,2141E-18	0	1,48E-19	2,02E-17	0
AP	[kg SO_2-eq.]	0,00459	0,000019935	0	2,22E-06	2,36E-05	0
EP	[kg PO_4^{3-}eq.]	2,90E-04	4,9764E-06	0	5,49E-07	2,66E-06	0
POCP	[kg ethene-eq.]	3,12E-04	-7,4393E-06	0	-7,95E-07	1,77E-06	0
ADPM	[kg Sb-eq.]	1,65E-05	6,1252E-10	0	7,49E-11	1,42E-09	0
ADPE	[MJ]	13,1	0,100516	0	0,0123	0,0522	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	3,76	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	3,76	0,0056605	0	6,91E-04	0,00704	0
NRPE	[MJ]	15,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	15,1	0,100728	0	0,0123	0,0538	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00871	6,5499E-06	0	8,01E-07	1,36E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	8,61E-09	4,6864E-09	0	5,73E-10	8,19E-10	0
NHW	[kg]	0,164	0,000015388	0	1,88E-06	0,27	0
RW	[kg]	7,99E-04	1,2441E-07	0	1,52E-08	6,12E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² G7 (per 0,27 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,609	0,0068999	0	8,41E-04	0,00341	0
ODP	[kg CFC11-eq.]	1,29E-15	1,1241E-18	0	1,37E-19	1,87E-17	0
AP	[kg SO_2-eq.]	0,00133	0,000018488	0	2,06E-06	2,18E-05	0
EP	[kg PO_4^{3-}eq.]	1,28E-04	4,6064E-06	0	5,08E-07	2,46E-06	0
POCP	[kg ethene-eq.]	1,68E-04	-6,8846E-06	0	-7,37E-07	1,64E-06	0
ADPM	[kg Sb-eq.]	4,42E-05	5,6758E-10	0	6,93E-11	1,31E-09	0
ADPE	[MJ]	5,62	0,093028	0	0,0114	0,0483	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,446	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,446	0,0052411	0	6,40E-04	0,00652	0
NRPE	[MJ]	5,85	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	5,85	0,093328	0	0,0114	0,0498	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00066	6,0652E-06	0	7,41E-07	1,25E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	4,17E-09	4,3417E-09	0	5,30E-10	7,59E-10	0
NHW	[kg]	0,00756	0,000014288	0	1,74E-06	0,25	0
RW	[kg]	8,89E-05	1,1541E-07	0	1,41E-08	5,66E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Galvanized Steel Wire Mesh (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,598	0,0026782	0	3,26E-04	0,00132	0
ODP	[kg CFC11-eq.]	5,23E-15	4,3517E-19	0	5,32E-20	7,27E-18	0
AP	[kg SO_2-eq.]	0,00176	7,1746E-06	0	7,98E-07	8,48E-06	0
EP	[kg PO_4^{3-}eq.]	1,36E-04	1,7888E-06	0	1,97E-07	9,55E-07	0
POCP	[kg ethene-eq.]	1,51E-04	-2,6729E-06	0	-2,86E-07	6,37E-07	0
ADPM	[kg Sb-eq.]	1,04E-06	2,1982E-10	0	2,69E-11	5,10E-10	0
ADPE	[MJ]	9,62	0,036123	0	0,00441	0,0188	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,36	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,36	0,0020335	0	2,48E-04	0,00253	0
NRPE	[MJ]	10,6	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	10,6	0,036223	0	0,00442	0,0193	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00528	2,3582E-06	0	2,88E-07	4,87E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,03E-09	1,6835E-09	0	2,06E-10	2,94E-10	0
NHW	[kg]	0,0861	5,5405E-06	0	6,77E-07	0,0971	0
RW	[kg]	4,03E-04	4,4817E-08	0	5,47E-09	2,20E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² LF1 (per 0,097 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,0936	0,0013788	0	1,68E-04	0,000681	0
ODP	[kg CFC11-eq.]	9,94E-16	2,2435E-19	0	2,74E-20	3,75E-18	0
AP	[kg SO_2-eq.]	0,000619	0,000003697	0	4,11E-07	4,37E-06	0
EP	[kg PO_4^{3-}eq.]	3,88E-05	9,2128E-07	0	1,02E-07	4,92E-07	0
POCP	[kg ethene-eq.]	4,04E-05	-1,3788E-06	0	-1,47E-07	3,29E-07	0
ADPM	[kg Sb-eq.]	4,09E-06	1,1341E-10	0	1,39E-11	2,63E-10	0
ADPE	[MJ]	1,52	0,018635	0	0,00227	0,00967	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,0004 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,0004 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,247	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,247	0,0010494	0	1,28E-04	0,0013	0
NRPE	[MJ]	1,75	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	1,75	0,018635	0	0,00228	0,00996	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000488	1,2141E-06	0	1,48E-07	2,51E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,18E-09	8,6834E-10	0	1,06E-10	1,52E-10	0
NHW	[kg]	0,00949	2,8529E-06	0	3,49E-07	0,05	0
RW	[kg]	9,14E-05	2,3082E-08	0	2,82E-09	1,13E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N1/N9 (per 0,05 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,112	0,0016588	0	2,02E-04	0,000818	0
ODP	[kg CFC11-eq.]	1,19E-15	2,6929E-19	0	3,29E-20	4,50E-18	0
AP	[kg SO_2-eq.]	0,000743	4,4417E-06	0	4,94E-07	5,24E-06	0
EP	[kg PO_4^{3-}eq.]	4,66E-05	1,1041E-06	0	1,22E-07	5,91E-07	0
POCP	[kg ethene-eq.]	4,84E-05	-1,6535E-06	0	-1,77E-07	3,94E-07	0
ADPM	[kg Sb-eq.]	4,90E-06	1,3641E-10	0	1,66E-11	3,15E-10	0
ADPE	[MJ]	1,82	0,022335	0	0,00273	0,0116	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,296	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,296	0,0012541	0	1,54E-04	0,00156	0
NRPE	[MJ]	2,1	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	2,1	0,022382	0	0,00274	0,0119	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000586	1,4588E-06	0	1,78E-07	3,01E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	1,42E-09	1,0441E-09	0	1,27E-10	1,82E-10	0
NHW	[kg]	0,0114	3,4276E-06	0	4,19E-07	0,0601	0
RW	[kg]	1,10E-04	2,7729E-08	0	3,39E-09	1,36E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N3/N5/N7 (per 0,06 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² N6 (per 0,1 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,187	2,76E-03	0	3,37E-04	0,00136	0
ODP	[kg CFC11-eq.]	1,99E-15	4,49E-19	0	5,48E-20	7,50E-18	0
AP	[kg SO_2-eq.]	0,00124	7,40E-06	0	8,23E-07	8,74E-06	0
EP	[kg PO_4^{3-}eq.]	7,76E-05	1,84E-06	0	2,03E-07	9,84E-07	0
POCP	[kg ethene-eq.]	8,07E-05	-2,75E-06	0	-2,95E-07	6,57E-07	0
ADPM	[kg Sb-eq.]	8,17E-06	2,27E-10	0	2,77E-11	5,25E-10	0
ADPE	[MJ]	3,03	3,72E-02	0	0,00455	0,0193	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,494	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,494	2,09E-03	0	2,56E-04	0,00261	0
NRPE	[MJ]	3,49	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	3,49	3,73E-02	0	0,00456	0,0199	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000976	2,43E-06	0	2,96E-07	5,02E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	2,37E-09	1,74E-09	0	2,12E-10	3,03E-10	0
NHW	[kg]	0,019	5,71E-06	0	6,98E-07	0,1	0
RW	[kg]	1,83E-04	4,62E-08	0	5,64E-09	2,27E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N6 (per 0,1 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² N8 (per 0,125 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,337	0,0034523	0	4,21E-04	0,0017	0
ODP	[kg CFC11-eq.]	2,41E-15	5,6058E-19	0	6,85E-20	9,37E-18	0
AP	[kg SO_2-eq.]	0,00154	9,2481E-06	0	1,03E-06	1,09E-05	0
EP	[kg PO_4^{3-}eq.]	9,99E-05	2,3035E-06	0	2,54E-07	1,23E-06	0
POCP	[kg ethene-eq.]	1,03E-04	-3,4423E-06	0	-3,68E-07	8,21E-07	0
ADPM	[kg Sb-eq.]	9,80E-06	2,8376E-10	0	3,47E-11	6,57E-10	0
ADPE	[MJ]	5,81	0,046464	0	0,00568	0,0242	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,001 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,001 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,601	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,601	0,0026229	0	3,20E-04	0,00326	0
NRPE	[MJ]	6,36	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	6,36	0,046664	0	0,0057	0,0249	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00127	3,0329E-06	0	3,71E-07	6,27E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,57E-09	2,1682E-09	0	2,65E-10	3,79E-10	0
NHW	[kg]	0,0244	7,1393E-06	0	8,72E-07	0,125	0
RW	[kg]	2,21E-04	5,7705E-08	0	7,05E-09	2,83E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² N8 (per 0,125 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² Tape (per 0,087 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	1,11	0,0023982	0	2,93E-04	0,00119	0
ODP	[kg CFC11-eq.]	1,47E-14	3,907E-19	0	4,77E-20	6,52E-18	0
AP	[kg SO_2-eq.]	0,00187	6,4352E-06	0	7,16E-07	7,60E-06	0
EP	[kg PO_4^{3-}eq.]	2,98E-04	1,6035E-06	0	1,77E-07	8,56E-07	0
POCP	[kg ethene-eq.]	2,46E-04	-2,3982E-06	0	-2,56E-07	5,72E-07	0
ADPM	[kg Sb-eq.]	1,04E-05	1,9735E-10	0	2,41E-11	4,57E-10	0
ADPE	[MJ]	17	0,032376	0	0,00395	0,0168	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	4,82	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	4,82	0,0018235	0	2,23E-04	0,00227	0
NRPE	[MJ]	18,2	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	18,2	0,032476	0	0,00397	0,0173	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00626	2,1135E-06	0	2,58E-07	4,37E-06	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	6,64E-08	1,5088E-09	0	1,85E-10	2,64E-10	0
NHW	[kg]	0,202	4,9711E-06	0	6,07E-07	0,0871	0
RW	[kg]	4,84E-04	4,017E-08	0	4,91E-09	1,97E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² Tape (per 0,087 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

LCA: Results

Environmental Impact: 1m² W1 (per 0,254 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,597	0,0070146	0	8,55E-04	0,00346	0
ODP	[kg CFC11-eq.]	9,60E-16	1,1441E-18	0	1,39E-19	1,90E-17	0
AP	[kg SO_2-eq.]	0,00134	0,000018788	0	2,09E-06	2,22E-05	0
EP	[kg PO_4^{3-}eq.]	1,33E-04	4,6764E-06	0	5,16E-07	2,50E-06	0
POCP	[kg ethene-eq.]	1,80E-04	-6,9946E-06	0	-7,48E-07	1,67E-06	0
ADPM	[kg Sb-eq.]	7,25E-09	5,7658E-10	0	7,04E-11	1,33E-09	0
ADPE	[MJ]	5,33	0,094528	0	0,0115	0,0491	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,002 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,002 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

Resource Use: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	0,27	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	0,27	0,0053258	0	6,50E-04	0,00662	0
NRPE	[MJ]	5,45	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	5,45	0,094828	0	0,0116	0,0506	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,000425	6,1652E-06	0	7,53E-07	1,27E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

LCA: Results

End of Life – Waste: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,52E-09	4,4117E-09	0	5,39E-10	7,71E-10	0
NHW	[kg]	0,00757	0,000014488	0	1,77E-06	0,254	0
RW	[kg]	5,01E-05	1,1741E-07	0	1,43E-08	5,76E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² W1 (per 0,254 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.

Environmental Impact: 1m² W2 (per 0,25 kg)

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
GWP-TOT*	[kg CO_2-eq.]	0,809	0,0068999	0	8,41E-04	0,00341	0
ODP	[kg CFC11-eq.]	5,42E-15	1,1241E-18	0	1,37E-19	1,87E-17	0
AP	[kg SO_2-eq.]	0,00472	0,000018488	0	2,06E-06	2,18E-05	0
EP	[kg PO_4^{3-}eq.]	2,25E-04	4,6064E-06	0	5,08E-07	2,46E-06	0
POCP	[kg ethene-eq.]	2,45E-04	-6,8846E-06	0	-7,37E-07	1,64E-06	0
ADPM	[kg Sb-eq.]	2,74E-05	5,6758E-10	0	6,93E-11	1,31E-09	0
ADPE	[MJ]	9,92	0,093028	0	0,0114	0,0483	0

GWP-TOT Global warming potential including emission and uptake of biogenic CO_2; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non-fossil resources; ADPE Abiotic depletion potential for fossil resources.

*A1-3: including 0,003 kg CO_2-eq. uptake of biogenic carbon dioxide included in product (0,003 kg CO_2-eq.) and packaging (0 kgCO_2-eq.).

LCA: Results

Resource Use: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
RPEE	[MJ]	2,11	-	-	-	-	-
RPEM	[MJ]	0	-	-	-	-	-
TPE	[MJ]	2,11	0,0052411	0	6,40E-04	0,00652	0
NRPE	[MJ]	11	-	-	-	-	-
NRPM	[MJ]	0	-	-	-	-	-
TRPE	[MJ]	11	0,093328	0	0,0114	0,0498	0
SM	[kg]	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0
W	[m³]	0,00734	6,07E-06	0	7,41E-07	1,25E-05	0

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water.

End of Life – Waste: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
HW	[kg]	3,12E-08	4,3417E-09	0	5,30E-10	7,59E-10	0
NHW	[kg]	0,0907	0,000014288	0	1,74E-06	0,25	0
RW	[kg]	4,09E-04	1,1541E-07	0	1,41E-08	5,66E-07	0

HW Hazardous waste disposed; NHW Nonhazardous waste disposed; RW Radioactive waste disposed.

End of Life – Output Flow: 1m² W2 (per 0,25 kg)

Parameter	Unit	A 1-3	A4	A5	C2	C4	D
CR	[kg]	0	0	0	0	0	0
MR	[kg]	0	0	0	0	0	0
MER	[kg]	0	0	0	0	0	0
EEE	[MJ]	0	0	0	0	0	0
ETE	[MJ]	0	0	0	0	0	0

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy.